

We claim:

1. A polyamide which contains a monoolefinically unsaturated  
5 compound chemically bonded at the end of the polymer chain  
via an amide group.
2. A polyamide as claimed in claim 1, where the monoolefinically  
unsaturated compound is a monocarboxylic acid.
- 10 3. A polyamide as claimed in claim 1, where the monoolefinically  
unsaturated compound is a monoamine.
4. A polyamide as claimed in any of claims 1 to 3, where the  
15 monoolefinically unsaturated compound has terminal olefinic  
unsaturation.
5. A polyamide as claimed in claim 2, where the monoolefinically  
unsaturated compound is a terminally olefinically  
20 unsaturated, linear, unbranched alkenemonocarboxylic acid.
6. A polyamide as claimed in claim 3, where the monoolefinically  
unsaturated compound is a terminally olefinically  
unsaturated, linear, unbranched alkenemonoamine.
- 25 7. A polyamide as claimed in claim 5, where the monoolefinically  
unsaturated monocarboxylic acid has the formula
$$\text{CH}_2 = \text{CH} - (\text{CH}_2)_n - \text{COOH}$$
- 30 where  $n = 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12$ .
8. A polyamide as claimed in claim 5, where the monoolefinically  
unsaturated monocarboxylic acid has the formula  
35  $\text{CH}_2 = \text{CH} - (\text{CH}_2)_3 - \text{COOH}$ .
9. A polyamide as claimed in any of claims 1 to 8, where the  
content of the monoolefinically unsaturated compound is in  
the range from 0.001 to 2 mol%, based on 1 mole of amide  
40 groups of the polyamide.
10. A polyamide obtainable by crosslinking a polyamide as claimed  
in any of claims 1 to 9.

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11. A process for preparing a polyamide, which comprises carrying out the reaction of monomers suitable for forming a polyamide to give a polyamide in the presence of a monoolefinically unsaturated compound as claimed in any of claims 1 to 8.

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12. A process for preparing a polyamide, which comprises carrying out the reaction of oligomers suitable for forming a polyamide to give a polyamide in the presence of a monoolefinically unsaturated compound as claimed in any of claims 1 to 8.

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13. A fiber, a film, or a molding, comprising a polyamide as claimed in any of claims 1 to 9.

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